METHODS AND MOLDS FOR PRODUCING HOT POURED COSMETIC MATERIALS

BACKGROUND OF THE INVENTION

[0001] The present invention relates to improvements in hot pour technology, particularly for cosmetic articles, that provides ready to use customized materials and products and a method of hot pouring such materials and products.

[0002] Prior art hot pour technology requires hot pour materials and products (such as for cosmetics made available in compact form) to be poured into a first receptacle and then transferred by gravity of pressure pour into another receptacle, such as a cosmetic receptacle. As such, the poured material or product for use in a compact generally has a concave (recessed) viewing surface without any distinctive or customized features, such as embossed or debossed surfaces. In addition, such surfaces are often uneven and inconsistent. Any customization of such materials or products, such as the creation of designs on the viewing surface of the material or product requires additional and complicated steps that rely on computers, lasers, and other equipment. Such customization techniques are not only complicated and costly (e.g., requiring costly equipment), they often produce inconsistent results. Clearly, then, there remains a need to provide a more economical and efficient method of producing hot pour cosmetic materials and products with consistent and even surfaces as well as providing hot pour cosmetic materials and products that may be customized with ease and efficiency and ready for use.

SUMMARY OF THE INVENTION

[0003] The present invention solves the current problem associated with current costly and inefficient methods of producing and customizing hot pour cosmetic materials and products. For example, the present invention provides improved hot poured materials, such as cosmetic articles and the like, and a method of providing the same.

[0004] In one embodiment of the present invention, there is provided a process for preparing a ready-to-use hot pour material, such as a hot pour cosmetic article or the like, comprising the steps of providing at least one mold for casting the hot pour material in a fluid state, the mold having a top and a base with at least one pressure fluid passage in the base and at least one pour space in the top, applying hot pour material into a cavity or interior chamber of the mold through the pour space and allowing hot pour material to cool in the mold, removing the top of the mold, wherein hot pour material remains in contact with the base of the mold, placing a first receptacle in direct contact with the hot pour material, and introducing pressure fluid through the base part of the mold to release the hot pour material in contact with the first receptacle from the base part of the mold, thereby producing a read-to-use hot pour material. The introduction of pressure fluid to release the hot pour material may take advantage of any of a number of pressure fluid techniques known to one of ordinary skill in the art. Preferably, the pressure is applied evenly through the base part of the mold to provide for an even ejection force.

[0005] The process of the present invention includes the provision of a two part mold with a top part and a base part. The top part generally comprising all or some of the following, including a perimeter wall, a planar surface, one or more pressure fluid passages, and/or one or more customized mold portions that may be raised as projections, sunken as recesses or combinations thereof to provide for material or product that is embossed, debossed, or both. The base part generally comprise all or some of the following, including an outer rim, inner rim, base surface, interior base chamber or cavity, bottom wall, one or more pressure fluid passages and one or more customized mold portions that may be raised as projections, sunken as recesses or combinations thereof to provide for material or product that is embossed, debossed, or both.

[0006] The process of the present invention may use, for example, a first receptacle to house the article upon its removal from the mold. The first receptacle may be any receptacle capable of receiving a hot pour cosmetic article or the like. Here, the hot pour cosmetic article is any material or product capable of being formed in a hot pour process. The process may also include a further step of placing the first receptacle in a second receptacle. Importantly, the process provides for a ready-to-use hot pour material or product, such as a cosmetic article or the like, that may have a substantially planar surface

which extends above the side edge of the first receptacle, is coplanar with the side edge of the first receptacle, or is disposed below the first receptacle side edge. As such, the formed hot pour material or product surface (e.g., cosmetic article) is either contiguous with a cooperative surface of a first receptacle, above the surface of a first receptacle or below the surface of a first receptacle. Similarly, such material or product after being placed in a second receptacle, may have a surface coplanar with a second receptacle, above the top edge of a second receptacle or below the top edge of a second receptacle. First and second receptacles include any case, compact, godet, or other such container capable of holding a hot pour material or product, such as a cosmetic article or the like. First and second receptacles are made of any material capable of holding a cooled hot pour product, such as plastic, a hardened polymer or polymer blend, glass, fibrous material, and metal as examples and may be transparent or opaque.

[0007] The present invention also provides a mold for preparing a customized hot pour material or product, the mold being capable of receiving a hot pour material such as a cosmetic article or the like and comprising a top part with a pour space and a bottom or base part with at least one pressure fluid passage and at least one customized mold portion. The bottom or base part further comprises some or all of the following, including an outer rim, inner rim, bottom wall, base surface, and an interior base chamber. The mold top (i.e., top part) may include similar customized mold portions and/or pressure fluid passages, as well as a perimeter wall, a planar surface, and one or more pour spaces as needed. In one embodiment, the pour space is the large enough to encompass a predominant portion of the top part.

[0008] The customized mold portion is selected from the group consisting of one or more projections (e.g., raised portions), one or more recesses (e.g., sunken portions), or combinations thereof to provide for material or product that is embossed, debossed, or both. The mold portion may be of any shape with recesses, projections, or both to provide for an overall design (uniform or nonuniform), letter(s), or word(s), as examples. Other shapes include a cylinder, sphere, polygon, palette, as examples. The shaped material, upon removal from the mold, is transferred to a receptacle of a similar shape or one that is different than the hot pour material, itself.

[0009] The present invention may be used with any number of hot pour materials or products, in particular cosmetic articles for lips, eyes, face, etc., that include lipsticks, lip glosses, pomades and their packaging. In the cosmetic industry, examples of receptacles include pans, godets, tubes, bottles, jars, flasks, boxes, and compacts. In addition, the cosmetic article may be placed in one or more sampling devices and may even be used for product promotion or as handouts. Examples of promotional means or handouts include magazine inserts, postcards, department store catalogs, and customer mailings.

[0010] An advantage of the present invention includes its availability and use with applied technology processes, such as dispensing and dosing systems and devices. As such, it may be used with automated or semi-automated systems and/or with multiprocessing equipment (e.g., equipment for feeding, preheating, filling, post heating, refrigerating, and collating). The present invention enables such hot pour material or product to be produced in a consistent and less costly fashion, and is readily customizable as needed.

[0011] Those skilled in the art will further appreciate the above-noted features and advantages of the invention together with other important aspects thereof upon reading the detailed description that follows in conjunction with the drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] For more complete understanding of the features and advantages of the present invention, reference is now made to the detailed description of the invention along with the accompanying figures, wherein:

FIGURE 1 depicts a top plan view of the bottom or base part of a mold of the present invention;

FIGURE 2 depicts a bottom plan view of the top part of a mold of the present invention;

FIGURE 3 depicts a side elevation view of the top and base parts of a mold of the present invention, wherein the top and base parts of the mold are separated from each other;

FIGURE 4 is a section view of the top and base parts of a mold of the present invention, shown separated from each other;

FIGURE 5 is a section view of the top and base parts of a mold of the present invention, wherein the top and base parts are connected to show the mold in its closed position and shown with cutout views showing some of the interior features;

FIGURE 6 is a section view of a mold of the present invention showing the step of pouring a hot pour material or product through the top part of the mold;

FIGURE 7 is a section view showing the step of removing the top part from the base part of a mold of the present invention;

FIGURE 8 depict section views showing placement of a first receptacle on the hot pour material or product while the material is still in the mold base or bottom part;

FIGURE 9 is a section showing the step of introducing a fluid stream through the base part of a mold of the present invention;

FIGURE 10 is a section view showing the step of removing an hot pour material or product from a base part of the mold of the present invention;

FIGURE 11 is a side elevation view of an hot pour material or product in a first receptacle following its transfer from a mold of the present invention, wherein the hot pour material extends above the side edge of the first receptacle;

FIGURE 12 is a side elevation view of an hot pour material or product in a first receptacle following its transfer from a mold of the present invention, wherein the hot pour material is disposed below the side edge of the first receptacle; and

FIGURE 13 is a side elevation view of an hot pour material or product in a first receptacle following its transfer from a mold of the present invention, wherein the hot pour material is substantially planar with the side edge of the first receptacle.

DETAILED DESCRIPTION OF THE INVENTION

[0013] Although making and using various embodiments of the present invention are discussed in detail below, it should be appreciated that the present invention provides many inventive concepts that may be embodied in a wide variety of contexts. The specific aspects and embodiments discussed herein are merely illustrative of ways to make and use the invention, and do not limit the scope of the invention.

[0014] In the description which follows like parts are marked throughout the specification and drawing with the same reference numerals, respectively. The drawing figures are not necessarily to scale and certain features may be shown exaggerated in scale or in a somewhat generalized or schematic form in the interest of clarity and conciseness.

[0015] Now referring to FIGURES 1 and 4, an example of a mold 2 in accordance with the invention is illustrated with respect to a base part 4. Generally, the exemplary base part 4 is a shaped block having a bottom wall 6, an upward facing continuous, planar outer rim 8, an inner rim 10, at least one interior base chamber or cavity 12 delimited by a base surface 14. (See FIGURE 4) The outer rim 8 is of a different, often lower, elevation than the inner rim 10. Likewise, the inner rim 10 is generally of a different elevation than the base surface 14 and delimits the top of the base part 4. The base surface 14 will generally include one or more projections 16 (e.g., raised or debossed portions) as well as one or more recesses 18 (e.g., sunken or embossed portions) with respect to a baseline 20. (See FIGURE 4) Baseline 20 may be coplanar with outer rim 8. The base surface 14 may include only projections 16 or only recesses 18. The projections 16 and/or recesses 18 may be of various configurations or combinations of configurations, and generally provides for a material that is shaped, such as in a uniform design, nonuniform design, letter(s), and/or word(s) with viewing surfaces that are embossed, debossed or both. One or more pressure fluid passages 22 are located at various positions in bottom wall 6 and extend between bottom wall 6, opening into one or more interior base chambers or cavities 12. Pressure fluid passages 22 open generally into the interior base chamber or cavity 12 at projections 16 and recesses 18; however, the pressure fluid passages may be disposed in other locations opening into interior base chamber 12.

[0016] FIGURE 1 shows a base part 4 that is square in shape. Similarly, the figure shows a square-shaped outer rim 8, square-shaped inner rim 10, and square-shaped base surface 14. Any alternative shape may be used for the base part 4, outer rim 8, inner rim 10, and base surface 14. In one embodiment of the base part 4, the outer rim 8, inner rim 10, and base surface 14 are the same shape. Alternatively, the outer rim 8, inner rim 10, and base surface 14 may be of different shapes. Shapes include but are not limited to a rectangle, triangle, sphere, polygon, and combinations thereof. In addition, the shape may be a design that is uniform or nonuniform, and may include letters and/or words.

[0017] Now referring to FIGURE 2, there is illustrated an example of a top part 30 of a mold of the present invention. Generally, the top part 30 comprises a perimeter wall 32 delimited by a planar surface 34, and at least one pour space 40. A recess 36, as shown in FIGURE 4, is formed in top part 30 between surface 34 and a perimeter ledge or shoulder 38 and opens to the pour space 40. Optionally, the top part 30 may also include pressure fluid passages as needed (not shown). While FIGURE 2 shows the top part 30, perimeter wall 32, and surface 34 to be rectangular in shape, any alternative shape may be used. Shapes include one or more of the shapes described above (e.g., rectangle, triangle, sphere, polygon, uniform design, nonuniform design, letter, word, and combinations thereof). In the embodiment shown in FIGURE 2, the perimeter wall 32, planar surface 34, and pour space 40 are the same shape. Alternatively, the perimeter wall 32, planar surface 34, and pour space 40 may be of different shapes. The perimeter wall 32 of the top part 30 is often the same shape as the outer rim 8 of the base part 4; however, the perimeter wall 32 (of the top part 30) and the outer rim 8 (of the base part 4) may be of different shapes. Likewise, the planar surface 34 of the top part 30 are often the same shape as the inner rim 10 of the base part 4, but may be of different shapes.

[0018] When referring to the top part 30, as shown in FIGURE 2, the perimeter wall 32 and surface 34 may or may not be continuous. When not continuous, they comprise separate parts that are in close contact with one another. As shown in FIGURE 2, the perimeter wall 32 and surface 34 are of different elevations. Generally, the perimeter wall 32 of top part 30 fits the outer rim 8 of base part 4. Similarly, surface 34 of top part 30 fits inner rim 10 of the base part 4. Surface 34 may, however, include a larger surface than shown (e.g., wider). In such a case, pour space 40 of top part 30 will be

dimensionally smaller. In addition, top part 30 may have more than one pour space 40. Top part 30 may also comprise one or more recesses, projections and/or pressure fluid passages. The shape and design of such projections and/or recesses will determine the number and location of pour spaces.

[0019] FIGURES 3 and 4 illustrate how top part 30 and base part 4 of a mold engage each other. Arrows 70 in FIGURES 3 and 4 show how the top part 30 is positioned in order to engage it to base part 4. Cutout views of FIGURE 4 show pour space 40 of top part 30 as well as projection 16, recess 18, and pressure fluid passages 22 of base part 4. Top part 30 also shows a shoulder or perimeter ledge 38 that contacts base part 4 of the mold of the present invention, dimensions of which will vary depending on, for example, the shape of the mold and on the number and extent of projections and/or recesses. Consequently, pour space 40 may be narrower or wider than shown, depending on the dimensions of shoulder or perimeter ledge 38.

[0020] Generally, the method of introducing a hot pour material or product 50 (HPM 50), such as a cosmetic article or the like, to a mold of the present invention comprises the steps of setting up a mold 2 with top part 30 and base part 4 tightly engaged, adding HPM 50 to the mold 2 through one or more pour spaces 40 to a fill level 60, and allowing the HPM 50 to cool to a hot pour consistency using cooling techniques known to one of ordinary skill in the art. (*See* FIGURES 5 and 6). As shown in FIGURES 5 and 6, fill level 60 is coplanar with perimeter wall 32 of top part 30. Other alternatives may be equally advantageous depending on the desired end product. Upon cooling of HPM 50, top part 30 of mold 2 is removed carefully, generally by moving upward relative to base part 4 (as shown in FIGURE 7). A first receptacle 70 replaces top part 30 of mold 2 (as shown in FIGURES 8A and 8B). HPM 50 in contact with first receptacle 70 is released from base part 4 by introducing pressure fluid, such as compressed air, through one or more pressure fluid passages 22 (as shown in FIGURES 9 and 10) providing for HPM 50 in contact with first receptacle 70, wherein HPM 50 displays one or more projections 16 and/or one or more recesses 18 (as shown in FIGURE 11).

[0021] As shown in FIGURES 5 and 6, the highest elevation for baseline 20 of base part 4 is higher than projections 16 and recesses 18 of mold 2. Other embodiments may provide for one or more projections 16 and/or one or more recesses 18 of base part 4 to be

higher than the highest elevation of the baseline 20. In addition, peak portions of projection 16 may be near or coplanar with fill level 60. Furthermore, fill level 60 may be coplanar with the uppermost surface of top part 30, as shown in FIGURES 5 and 6. An alternative embodiment includes a fill level that is not coplanar with the uppermost surface of top part 30.

[0022] Removal of top part 30 of mold 2 from base part 4 after HPM 50 has cooled, as shown in FIGURE 7, may be performed mechanically or by hand. In some instances, pressure fluid, such as air, introduced through pressure fluid passages 22 may used to remove the top part 30 from base part 4. The addition of a first receptacle 70 to the cooled HPM 50, as shown in FIGURE 8, may also be performed mechanically or by hand. Similarly, the first receptacle 70 may be introduced into a second receptacle 72. Mechanical techniques, as used herein and throughout the specification are those known to one of ordinary skill in the art and may be automated.

[0023] As shown in FIGURE 11, the surface of formed HPM 50 is above the surface of a first receptacle 70. Alternate embodiments include a surface of formed HPM 50 that is either contiguous with a cooperative surface of first receptacle 70, as shown in FIGURE 12, or below the surface of first receptacle 70, as shown in FIGURE 13.

[0024] While specific alternatives to steps of the invention have been described herein, additional alternatives not specifically disclosed but known in the art are intended to fall within the scope of the invention. Thus, it is understood that other applications of the present invention will be apparent to those skilled in the art upon reading the described embodiment and after consideration of the appended claims and drawing.